

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI EXAMINATION – SUMMER 2025

Subject Code: 3160212

Date: 30-05-2025

Subject Name: Two and Three Vehicle Technology

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Define following terms. 1. Carburation 2. Scavenging 3. Valve over lapping	03
(b) Draw port timing diagram of 2 stroke petrol engine and label it.	04
(c) Why cranking mechanism is used automobile? Explain different cranking mechanism employed in three wheeler.	07
Q.2 (a) Justify the need of venturi in carburetor.	03
(b) State the criteria considered to select engine for two wheeler.	04
(c) Compare mist and splash lubrication system	07
OR	
(c) List out scavenging methods. Elaborate uniflow scavenging system.	07
Q.3 (a) Define following terms. 1. Rake angle 2. Trail distance 3. Offset distance	03
(b) Justify the need of multi-plate clutch in motor cycle.	04
(c) Draw the layout of three wheeler transmission system and label it.	07
OR	
Q.3 (a) Define following terms. 1. Shock absorber 2. Spring 3. Steering fork	03
(b) Compare spoke wheel and split disk wheel.	04
(c) Explain mono suspension used in two wheeler with sketch.	07
Q.4 (a) State the function of suspension system.	03
(b) State the design consideration for frame.	04
(c) Elaborate difference between drum and disk brake.	07
OR	
Q.4 (a) State the material used for frame.	03
(b) State main components of battery with their function.	04
(c) Elaborate working of 2 stroke engine with sketch.	07

- Q.5 (a)** State the function of following system. **03**
1. Horn
 2. Charging system
 3. Lighting system
- (b)** Explain ergonomic consideration for two wheeler design. **04**
- (c)** Elaborate difference between battery and magneto ignition system. **07**
- OR**
- Q.5 (a)** Define **03**
1. Belt drive
 2. Chain drive
 3. Shaft drive
- (b)** Classify three wheeler and two wheeler. **04**
- (c)** Explain front telescopic suspension system with sketch. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024****Subject Code:3160212****Date:24-05-2024****Subject Name:Two and Three Vehicle Technology****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Explain scavenging used in two wheeler. | 03 |
| | (b) Briefly explain Construction details of tires with neat sketch. | 04 |
| | (c) Explain the construction and working of lead-acid battery. | 07 |
| Q.2 | | |
| | (a) Explain Dog clutch with neat sketch. | 03 |
| | (b) Discuss the working of electric horn used in two wheelers. | 04 |
| | (c) Explain the disc brake used in bikes with neat sketch. | 07 |
| OR | | |
| | (c) Compare spokes wheels, alloy wheels and pressed wheels. | 07 |
| Q.3 | | |
| | (a) Draw the brake circuit layout for two and three wheeler. | 03 |
| | (b) Explain the port timing diagram for two stroke engine. | 04 |
| | (c) Explain different cranking mechanism employed in two and three wheeler. | 07 |
| OR | | |
| Q.3 | (a) Explain gear shifting mechanism in bike. | 03 |
| | (b) Draw the lighting diagram for two-wheeler. | 04 |
| | (c) Explain the working of differential in three wheelers with sketch. | 07 |
| Q.4 | | |
| | (a) Differentiate between tube tyre and tybeless tyre. | 03 |
| | (b) Discuss the modification required for CNG conversion. | 04 |
| | (c) Explain Construction and working of a carburetor with diagram. | 07 |
| OR | | |
| Q.4 | (a) What ate the possible causes of more fuel consumption in two wheeler and give its remedies. | 03 |
| | (b) Write down merits and demerits of shaft drive over chain drive. | 04 |
| | (c) Explain preventive maintenance in two and three wheelers. | 07 |
| Q.5 | | |
| | (a) What is the importance of side car in two wheeler? | 03 |
| | (b) Justify the need of multi-plate clutch in motor cycle. | 04 |
| | (c) Explain front telescopic suspension system with sketch. | 07 |
| OR | | |
| Q.5 | (a) Compare chain drive and gear drive for two wheeler. | 03 |
| | (b) Explain constant mesh gear box with neat sketch. | 04 |
| | (c) Explain starting mechanism for two wheeler vehicles. | 07 |

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3160212****Date:20-07-2023****Subject Name:Two and Three Vehicle Technology****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Explain scavenging used in Two wheeler.	03
(b) Explain the battery starting system used in two wheelers.	04
(c) Differentiate between sports bike, cruiser bike and street bike.	07
 Q.2 (a) Differentiate between tube tyre and tubeless tyre.	 03
(b) Explain Gear shift mechanism for two wheeler.	04
(c) With help of neat sketch discuss the working of kick mechanism for two wheeler.	07
OR	
(c) Explain the multi plate clutch used in two wheeler with neat sketch in detail.	07
 Q.3 (a) Define air resistance and gradient resistance	 03
(b) Write a short note on CVT-Continuously Variable Transmission of Two-wheeler.	04
(c) Explain Various Safety measures & arrangements for Two & Three wheeler.	07
OR	
Q.3 (a) Compare chain drive and gear drive for two wheeler.	03
(b) Which modification is required to use CNG in three wheeler?	04
(c) Explain preventive maintenance in two and three wheelers.	07
 Q.4 (a) Define (1) Belt drive (2) Chain drive (3) Shaft drive.	 03
(b) Explain spoke wheel and split disk wheel.	04
(c) Explain ergonomic considerations for body work of two and three wheelers.	07
OR	
Q.4 (a) Compare disc brakes with drum brakes.	03
(b) State the design consideration for frame.	04
(c) Explain shock absorber construction and working principle. With neat sketch.	07

- Q.5 (a)** Draw the layout of passenger rickshaw. **03**
(b) What is the purpose of helmet and explain any one type of helmet. **04**
(c) Explain Construction and working of a carburetor with diagram. **07**

OR

- Q.5 (a)** Explain the magneto ignition system for two wheeler in short. **03**
(b) Draw the valve timing diagram for 4 stroke petrol engine and port diagram for 2 stroke petrol engine. **04**
(c) Explain construction of handle bar used in motorcycles. Also list down some of the standard size parameters. **07**

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160212****Date:16/06/2022****Subject Name:Two and Three Vehicle Technology****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|-----|--|-----------|
| Q.1 | (a) | Define steering terms. (1) Rake angle (2) Trail (3) distance Offset distance | 03 |
| | (b) | Explain working of two stroke engine. | 04 |
| | (c) | Explain different cranking mechanism employed in two and three wheeler. | 07 |
| Q.2 | (a) | Explain role of carburetor in two wheeler. | 03 |
| | (b) | State the criteria considered to select engine for two wheeler. | 04 |
| | (c) | Explain in brief mist and splash lubrication system | 07 |
| OR | | | |
| | (c) | List out scavenging methods. Explain loop scavenging system. | 07 |
| Q.3 | (a) | Define following terms.
1. Carburation
2. Scavenging
3. Air cooling system. | 03 |
| | (b) | State the design consideration for frame. | 04 |
| | (c) | Draw and explain the layout of two wheeler transmission system and label it. | 07 |
| OR | | | |
| Q.3 | (a) | Define following terms. (1) Shock absorber (2) Spring (3) Frame | 03 |
| | (b) | Explain spoke wheel and split disk wheel. | 04 |
| | (c) | Explain mono suspension used in two wheeler with sketch. | 07 |
| Q.4 | (a) | State the function of suspension system. | 03 |
| | (b) | Justify the need of multi-plate clutch in motor cycle. | 04 |
| | (c) | Explain difference between battery and magneto ignition system. | 07 |
| OR | | | |
| Q.4 | (a) | State the material used for frame. | 03 |
| | (b) | State main components of battery with their function. | 04 |
| | (c) | Differentiate between drum and disk brake. | 07 |
| Q.5 | (a) | State the function of following system.
1. Fins
2. Radiator
3. Compression ration | 03 |
| | (b) | Explain ergonomic consideration for two wheeler design. | 04 |
| | (c) | Explain front telescopic suspension system with sketch. | 07 |

OR

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|------------|------------|---|-----------|
| Q.5 | (a) | Define (1) Belt drive (2) Chain drive (3) Shaft drive | 03 |
| | (b) | Classify three wheeler and two wheeler. | 04 |
| | (c) | Differentiate between two and three wheeler. | 07 |
